RUSH Machinery

The Tool Grinding Specialists

Grinding Fluid Filtration Systems

Get the Competitive Edge!

Model FC-300-1760 with top mounted chiller

The Rush FC-300 Series Grinding Fluid Filtration Systems filter grinding oils to a one micron particle size and water-based fluids to a five micron (nominal) particle size using edge filtration technology.

Designed to integrate with most grinding, lapping and honing machines in use today, the FC-300 Systems provide continuous filtration, automatic back flush, and clean fluid on demand to your machines.

An optional cooling system can be incorporated to ensure a consistent grinding fluid temperature.

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One Micron Filtration Benefits:

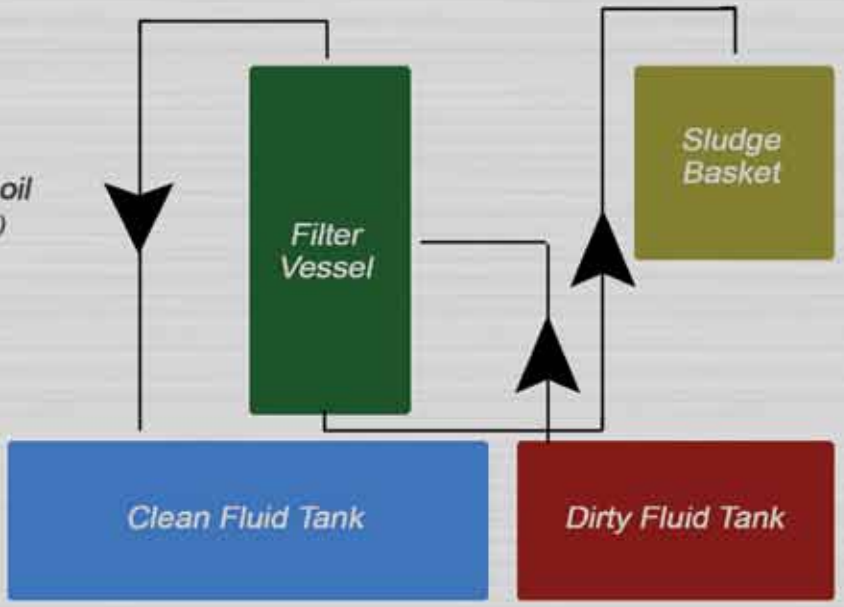
- Improves surface finishes
- Extends grinding wheel and grinding fluid life
- Reduces cycle times
- Vastly lowers buildup of carbide residue in machine
- Reduces costly wear, maintenance and repair of grinding machines

FC-300 System benefits:

- Reduced filter replacement costs
- Filter element life of approximately 15,000 hours (oil)
- Greatly reduced maintenance, labor and disposal costs
- Increased reclamation of carbide
- Fluid delivered at the required pressure and volume for each machine
- Compact foot print

Filter Elements for oil
(61 Elements per Vessel)

Sludge Basket rolls out



Clean Fluid Delivery Pump

Filtration Pump

The Rush FC-300 Series Filtration Systems filter grinding fluids (oil or water) with a fully automatic process that eliminates the need to change cartridge filters or clean settling tanks.

Dirty grinding fluid is discharged from the grinding machine into the dirty fluid tank. The dirty fluid is pumped through the edge filtration elements in the filter vessel, and the filtered fluid flows into the clean fluid tank. The clean fluid is pumped to the grinding machine upon demand, at the required pressure and volume. At periodic intervals, the edge filtration elements are automatically cleaned by a rapid back flush cycle. The sludge is deposited in the cloth lined sludge basket and the excess fluid drains into the dirty fluid tank. On multi-vessel systems, vessels are automatically back flushed individually to aid in providing a constant supply of clean fluid during the regeneration cycle.

Clean fluid is always available for the grinding machine, even during the back flush cycle.

FC-300 Series
Grinding Fluid Filtration Systems

The Rush FC-300 Series Grinding Fluid Filtration Systems filter grinding oil to a one micron particle size, and water-based fluids to a five micron (nominal) particle size using edge filtration technology. Systems for oil incorporate one or more filter vessels, each containing 61 filter elements. Each element used for oil filtration has approximately 9,000 special paper discs held together in compression. Oil is pumped through the element with all particles over one micron in size being trapped on the outside edge of the discs. The elements for water filtration are stainless steel discs under compression that utilize edge filtration technology to filter fluid to a five micron (nominal) particle size and never need replacing. The FC-300 system provides continuous filtration, automatic back flush and clean fluid on demand to your machines. An optional cooling system can be incorporated to ensure consistent grinding fluid temperature.

System Features:

- Customized systems designed for your machines and shop floor layout
- Single, multiple machine and centralized configurations available
- Single and multi-pump configurations deliver clean fluid on demand at the required volume and pressure
- Balanced clean and dirty fluid tank sizes ensure separation of clean and dirty fluid during automatic regeneration
- Cast iron sealless filter pumps handle the dirty fluids
- All pneumatic and electrical controls are in conveniently located enclosures
- Compatible with mineral and synthetic oils and water-based fluids
- Recommended oil viscosity range: 37-58 SUS (3.6-10 cst) at 100 degrees F
- For use with carbide, HSS, stainless steel and other materials
- All components designed and located for ease of maintenance

Filter vessel for water-based fluid

Optional Equipment:

Selection of large capacity cooling systems made specifically for oil or water. Some units can be mounted on top of the filtration system, and all can be placed beside the filtration system or remotely located.

Chiller Unit

Chiller Unit on top

Pre-filter (Top cover removed)

Pre-filters are used for removing steel swarf when filtering steel or a mix of carbide and steel. They can be equipped with magnetic rods for even greater efficiency.

Drum-type magnetic separators and maintenance-free automatic prefilters are available for removing larger volumes of steel swarf.

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Specifications:

- Filtration type: Edge Filtration
- Filtration Accuracy: All particles one micron (oil), five micron (nominal, water) and larger are removed
- Filtration Element Material:Compressed paper discs (oil); Stainless steel discs (water)
- Applicable fluids:
  - Mineral or synthetic, low viscosity grinding oil (fluid to be approved by Rush Machinery)
  - Water-based coolant
- Fluid Viscosity: 37-58 sus (3.6-10 cst) at 100 degrees F (oil)
- Compatible Swarf Materials: Carbide, HSS*, stainless steel*, ceramic**

*Requires 100 micron prefilter for all steels when using paper filter elements ** System needs to be oversized to accommodate ceramic swarf

- Recommended Operating Temperature: 70-85 degrees F (21-29.5 degrees C)
- Minimum Operating Temperature: 55 degrees F (13 degrees C)
- Maximum Operating Temperature: 110 degrees F (43 degrees C)
- Compressed air requirement: 80 psi dry air
- Clean fluid delivery pump(s): Sized to customer requirements for pressure and volume
- Operating Voltage: 440V (other voltages available)

Model FC-300-1760 (single vessel)

Filtration element area: 70 square feet (oil)
Flow rate: To 30 gpm at 46 sus (114 L/min at 6 cst) Filter flow rate will vary with viscosity
Total fluid capacity: 200 gal (760 L)
Dimensions: 55" x 50" x 65" high (140 cm x 130 cm x 165 cm) (L xWxH)

Model FC-300-21100 (two-vessel)

Filtration element area: 140 square feet (oil)
Flow rate: To 60 gpm at 46 sus (228 L/min at 6 cst) Filter flow rate will vary with viscosity
Total fluid capacity: 300 gal (1100 L)
Dimensions: 88" x 50" x 65" high (220 cm x 130 cm x 165 cm)

Model FC-300-31300 (three vessel)

Filtration element area: 211 square feet (oil)
Flow rate: To 90 gpm at 46 sus (342 L/min at 6 cst) Filter flow rate will vary with viscosity
Total fluid capacity: 340 gal (1300 L)
Dimensions: 88" x 50" x 65" high (220 cm x 130 cm x 165 cm)

Larger systems available, please consult us to review your application.

Available Options

Refrigerated cooling system (sized to match the system)
Prefilter for steel swarf – 100 micron hanging socks
Bar magnets for sock-type prefilter
Magnetic drum prefilter (for fluids containing large amounts of steel swarf)
Maintenance-free automatic prefilter

Rush Machinery is a leading supplier of tool grinding equipment and has been committed to quality, service and innovation since 1983.

Contact us to receive a demo DVD with the complete Rush Machinery line of machines and fixtures.

Go to www.rushmachinery.com to view information on Wheel Truing and Dressing Machines, Grinding Fluid Filtration Systems, Carbide Rod Cut-Off Machines, PCD Grinders and other tool grinding equipment.

Grinding Fluid Filtration Systems

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